Healthcare Associated Infections (HAI) Program

Glossary of Key Terms and Definitions

Acute Care Hospitals: Facilities designated as acute care by the Connecticut Department of Public Health.

Ambulatory surgery center (ASC): Typically freestanding health facility that can keep patients for up to 23 hours to perform surgical procedures.

Antibiogram: The result of laboratory testing for the sensitivity of an isolated bacterial strain to different antibiotics. It is by definition an *in vitro*-sensitivity.

Birthweight: Refers to the weight of the infant **at the time of birth** and should not be changed as the infant gains weight. For example, if a neonate weighs 2 pounds at birth but remains in the NICU for two months and has a body weight of 3 ½ pounds when it develops a CLABSI infection, the recorded birthweight should still be 2 pounds.

Case: An instance of a particular disease, injury, or other health conditions that meets selected criteria.

CDC: The Centers for Disease Control and Prevention.

CDC Location (formerly labeled as "NHSN Location"): Tthe CDC-defined designation given to a patient care area housing patients who have similar disease conditions or who are receiving care for similar medical or surgical specialties. Each facility location that is monitored is "mapped" to one CDC Location. The specific CDC Location code is determined by the type of patients cared for in that area according to the **80% Rule**. That is, if 80% of patients are of a certain type (e.g., pediatric patients with orthopedic problems) then that area is designated as that type of location (in this case, an Inpatient Pediatric Orthopedic Ward).

Central line: A flexible tube that is inserted near the patient's heart or into one of the large veins or arteries. A central line provides access to a large vein that can be used to give fluids, measure the amount of fluid in the body or to give medication. The NHSN definition of a central line is an intravascular catheter that terminates at or close to the heart or in one of the great vessels which is used for infusion, withdrawal of blood, or hemodynamic monitoring. The following are considered great vessels for the purpose of reporting central line infections and counting central line-days in the NHSN system: aorta, pulmonary artery, superior vena cava, inferior vena cava, brachiocephalic veins, internal jugular veins, subclavian veins, external iliac veins, and common femoral veins.

Note: An introducer is considered an intravascular catheter.

Note: In neonates, the umbilical artery/vein is considered a great vessel.

Note: Neither [the location of] the insertion site nor the type of device may be used to determine if a line qualifies as a central line. The device must terminate in one of these vessels or in or near the heart to qualify as a central line.

Note: Pacemaker wires and other nonlumened devices inserted into central blood vessels or the heart are not considered central lines, because fluids are not infused, pushed, nor withdrawn through such devices.

Umbilical Catheter: A central vascular device inserted through the umbilical artery or vein in a neonate.
Temporary Central Line: Non-tunneled catheter.
Permanent Central Line: Includes Tunneled catheters, including certain dialysis catheters Implanted catheters (including ports).

Central line associated bloodstream infections (CLABSI): A CLABSI is a primary bloodstream infection (BSI) in a patient that had a central line or umbilical catheter in place at the time of the onset of the event, or was in place within 48 hours before the onset of the event. NOTE: There is no minimum period of time that the central line must be in place for the BSI to be considered central line-associated.

Central line associated bloodstream (CLABSI) infection rate: Infection rate is defined as the number of CLABSI infections per 1000 central line-days.

Central Line Associated BSI rate per 1000 central line days =

$$\frac{\text{Number of central line associated infections}}{\text{Number of central line-days}} \times 1000$$

Example: If a hospital intensive care unit (ICU) had 5 infections and 100 central line-days, their rate would be calculated as follows:
5/100 = .05 infections per central line-days X 1000 = a rate of 50 central line infections per 1000 central line- days

Central line days: The total number of days a central line is in place for each patient in the intensive care unit (ICU). The count is performed each day, and each patient with a central line is counted as a central line-day. The count should be performed each day and at approximately the same time each day.

Central line utilization ratio: The central line utilization ratio is defined as the ratio of the number of central line-days (or the total number of days of exposure to the central line by all the patients in the selected population during the selected time period) divided by the number of patient days (or the total number of days that patients are in the location during the selected time period) during a specific surveillance period.
Central Line Utilization Ratio =

$$\frac{\text{Number of central line days during a specified surveillance period}}{\text{Number of patient days during the same period}}$$

Community Associated Infection are infections that are acquired by persons who **have not** been recently hospitalized (within the past year) or had a medical procedure (such as dialysis, surgery, catheters).

CT DPH: The Connecticut Department of Public Health

Date of Infection: See “Infection Date”

Definition: A set of uniformly applied criteria for determining whether a person should be identified as having a particular disease, injury, or other health condition. In epidemiology, particularly for an outbreak investigation, a case definition specifies clinical criteria and details of time, place, and person.

Device Associated Infection: An infection in a patient with a device (e.g., ventilator or central line) that was used within the 48-hour period before onset of infection. If the interval is longer than 48 hours, there must be compelling evidence that the infection was associated with device use. For catheter-associated UTI, indwelling urinary catheter must have been in place within 7 days before positive laboratory results or signs and symptoms meeting criteria for UTI were evident.

> **Note**: There is no minimum period of time that the device must be in place in order for the infection to be considered device-associated.

Device Days: A count of the number of patients with a specific device in the patient care location. To calculate device days, for each day of the month, at the same time each day, record the number of patients who have the specific device (e.g., central line, ventilator, or indwelling urinary catheter).

Drug-resistant infections: Infections that have become resistant to antibiotics commonly used to kill infections caused by resistant strains of bacteria. Usually, other antibiotics can be used to kill drug resistant infections.

Epidemiology: The study of populations to determine the frequency and distribution of disease and measure risks.

Event: Defined by the CDC NHSN system as an infection. NHSN classifies healthcare-associated infections into 13 major **event** types and 49 specific **event** types. For example, a Urinary Tract Infection (UTI) is a major event, and the specific UTI events are Symptomatic Urinary Tract Infection (SUTI), Asymptomatic Bactiuria (ASB), and Other Urinary Tract Infection (OUTI).

Event Contributed to: When the event either directly caused death or exacerbated an existing disease condition which then led to death.

Exposure: Having come into contact with a cause of, or possessing a characteristic that is a determinant of, a particular health problem.

Extrinsic risk: A risk that is not inherent in the patient. Some forms of treatment are considered extrinsic risk factors, such as the use of invasive devices (such as catheters) or surgical procedures.

HHS: The federal Department of Health and Human Services.

Health: A state of complete physical, mental, and social well-being and not merely the absence of disease or other infirmity.

Healthcare-Associated Infection (HAI): A localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s) that:

1. occurs in a patient in a healthcare setting (e.g., a hospital or outpatient clinic),
2. was not found to be present or incubating at the time of admission unless the infection was related to a previous admission to the same setting, and
3. if the setting is a hospital, meets the criteria for a specific infection site as defined by CDC.

Heart bypass or coronary artery bypass graft (CABG, pronounced "cabbage"): A surgery used to bypass blocked heart arteries by creating new passages for blood to flow to the heart muscle. Arteries or veins from other parts of the body are used as grafts.

Hip replacement: An elective procedure for people with severe hip damage or pain related to chronic osteoarthritis, rheumatoid arthritis or other degenerative processes involving the hip joint. The surgical procedure for a hip replacement involves removing the damaged cartilage and bone from the hip joint and replacing them with new, manufactured parts.

Infant: A child less than one year old.

Infection: Invasion of the body tissues of a host by an infectious agent, whether or not it causes disease.

Infection Date (month/day/year): The date when the first clinical evidence of the healthcare associated infection appeared or the date the specimen used to make or confirm the diagnosis was collected, whichever comes first.

Infusion: The introduction of a solution through a blood vessel via a catheter lumen. This may include continuous infusions such as nutritional fluids or medications, or it may include intermittent infusions such as flushes or IV antimicrobial administration, or blood, in the case of transfusion or hemodialysis.

Intensive Care Unit: A nursing care area that provides intensive observation, diagnosis, and therapeutic procedures for adults and/or children who are critically ill. An ICU excludes nursing areas that provide step-down, intermediate care or telemetry only. Specialty care areas are also excluded. The type of ICU is determined by the kind of patients cared for by the unit. That is, if 80% of patients are of a certain type (e.g., patients with trauma), then that ICU is designated as that type of unit (in this case, trauma ICU). When a unit houses roughly equal populations of medical and surgical patients, it is called a medical/surgical unit.

Intravascular device: A device used to administer a solution into a vein, such as the familiar IV drip.

Knee replacement surgery (arthroplasty): An elective procedure for people with severe knee damage and pain related to osteoarthritis, rheumatoid arthritis, and traumatic arthritis. A total knee replacement involves removing the damaged cartilage and bone from the surface of the knee joint and replacing them with a man-made surface of metal and plastic. A partial knee replacement involves replacing only part of the knee joint.

Location: The specific patient care area to which a patient is assigned while receiving care in the healthcare facility.

> **Note**: Only locations where patients are housed overnight (i.e., inpatient locations) and where denominator data are collected can be used when monitoring events in the Device-associated Module. This means that operating rooms (including cardiac catherization labs, c-section rooms, and interventional radiology) and outpatient locations are not valid locations when monitoring events in the Device-associated Module Monthly Reporting Plan.

MRSA methicillin-resistant Staphylococcus aureus: Methicillin is an antibiotic drug commonly used to treat Staphylococcus (staph) infections. Some strains of staph are not killed

by methicillin. If the staph infection is not killed by methicillin then it is called methicillin-resistant *Staphylococcus aureus*, or MRSA.

Metric: A measurement for calculating health outcomes. There are both process metrics that measure adherence to standard health quality processes and outcome metrics that measure the number of patients affected by specific medical treatments.

Mortality: A fatal outcome: death.

Multiple Procedures: More than one NHSN operative procedure performed through the same incision during the same trip to the operating room.

NHSN or the National Healthcare Safety Network: A CDC developed web based health facility acquired infections reporting system.

Neonatal Intensive Care Unit (NICU): A patient care area that provides care to infants who are critically ill. Most NICU patients are under the care of a pediatrician who is a neonatologist.

Neonate: A patient who is an infant less than or up to 30 days of age.

NHSN inpatient: A patient whose date of admission to the healthcare facility and the date of discharge are different calendar days.

NHSN outpatient: A patient whose date of admission to the healthcare facility and the date of discharge are the same day.

NHSN patient days: A count of the number of patients in the patient care location. To calculate patient days, for each day of the month, at the same time each day, record the number of patients on the unit. At the end of the month, the sum of all days is recorded.

Nosocomial infection: The term 'nosocomial' comes from two Greek words: 'nosus' meaning 'disease' + 'komeion' meaning 'to take care of'. Hence, nosocomial should apply to any disease contracted by a patient while under medical care. However, the meaning of 'nosocomial' has been whittled down over the years and now just refers to hospitals – it is now synonymous with hospital-acquired and refers to any infection that occurs during or after hospitalization that was not present or incubating at the time of the patient's admission.

Operating room: A patient care area that meets the American Institute of Architects AIA) criteria **(OR)** for an operating room. This may include an operating room, C-Section room, interventional radiology room or a cardiac catheterization lab.

Operation: A single trip to the operating room (OR) where a surgeon makes at least one incision through the skin or mucous membrane, including laparoscopic approach, and closes the incision before the patient leaves the OR.

Pathogen: An agent of disease –that is, a disease producer. The term pathogen is used most commonly to refer to infectious organisms. These include microorganisms such as bacteria, viruses and fungi.

Permanent Central Line: A central line that is tunneled, including certain dialysis catheters. Includes implantable catheters.

Point prevalence: The number of events or persons with a given disease or other attribute during a specified point in time.

Population: The total number of inhabitants of a geographic area or the total number of persons in a particular group (e.g., the number of persons engaged in a certain occupation).

Prevalence: The number of events (for example, instances of a given disease or other condition) in a given population at a designated time.

Procedure specific: Related to a specific procedure. Procedure-specific infection rates for total hip replacements, for example, are only those infection rates that relate to total hip replacements.

Prospective surveillance: The monitoring of patients for infection while they are still in hospital. This surveillance can also include post discharge surveillance, whereby patients are monitored for a set period once they leave hospital. See also retrospective surveillance.

Rate: An expression of the relative frequency with which an event occurs among a defined population per unit of time, calculated as the number of new cases or deaths during a specified period divided by either person-time or the average (midinterval) population. In epidemiology, it is often used more casually to refer to proportions that are not truly rates (e.g., attack rate or case-fatality rate).

Retrospective surveillance: Using chart reviews or other documents after the patient has been discharged from the hospital as the sole means of identifying infections.

Risk: The probability that an event will occur (e.g., that a person will be affected by, or die from, an illness, injury, or other health condition within a specified time or age span).

Risk adjustment: A standardized method used to ensure that intrinsic and extrinsic risk factors for a hospital-acquired infection are considered in the calculation of hospital acquired infection rates. This allows for a more accurate comparison of different hospital's prevention programs.

Risk factor: An aspect of personal behavior or lifestyle, an environmental exposure, or a hereditary characteristic that is associated with an increase in the occurrence of a particular disease, injury, or other health condition.

Risk index: A means of stratifying patients according to their risk of infection. This then allows appropriate comparison of infection rates. See also risk adjustment.

Secondary Bloodstream infection (BSI): A culture-confirmed BSI associated with a documented HAI at another site. If the primary infection is cultured, the Secondary BSI must yield a culture of same organism and exhibit same antibiogram as the primary HAI site. For example, if blood culture is positive in a patient with a nosocomial UTI and organisms and

antibiograms of both blood and urine specimens are identical, infection is reported as UTI with secondary BSI. Secondary BSI is not reported separately. If, on the other hand, an organ/space SSI is identified by CT scan and no culture is used to meet the criteria for SSI-GIT, and a blood culture grows *Bacteroides fragilis,* then the SSI-GIT is recorded as an SSI with a secondary BSI. The pathogen for the SSI is recorded as *Bacteroides fragilis.*

Speciality Care Area (SCA): A hospital location which includes one of the types below:

- Bone marrow transplant
- Solid organ transplant
- Inpatient acute dialysis
- Hematology/oncology
- Long term acute care

Standardization: A set of techniques used to remove, as far as possible, the effects of differences in age or other confounding variables when comparing two or more populations.

Surgical Site Infections (SSI): Infections that are directly related to an operative procedure. Some SSIs are minor and only involve the skin or subcutaneous tissue. Other SSIs may be deeper and more serious.

Surveillance: The ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health.

Surveillance Cultures: Those cultures reported as part of infection control surveillance such as stool cultures for vancomycin-resistant enterococci (VRE).

Symptom: Any indication of disease noticed or felt by a patient.

Temporary Central Line: A central line that is not tunneled.

Transfer Rule: If a device-associated infection develops within 48 hours of transfer from one inpatient location (location A) to another in the same facility (location B) the infection is attributed to the transferring location (location A).

Trend: Movement or change in frequency over time, usually upwards or downwards**.**

Umbilical Catheter: A central vascular device inserted through the umbilical artery or vein in a neonate. The catheter is a long, soft plastic tube that is placed in the umbilical cord either through the umbilical artery or umbilical vein to allow fluids and medications to be given over an extended period.

Validity: The degree to which a measurement, questionnaire, test, or study or any other data collection tool measures what it is intended to measure.

Ventilator: A device to assist or control respiration continuously through a tracheostomy or by endotracheal intubation.

> **Note**: Lung expansion devices such as intermittent positive pressure breathing (IPPB); nasal positive end-expiratory pressure (PEEP); continuous nasal positive airway

pressure (CPAP, hypoCPAP) are not considered ventilators unless delivered via tracheostomy or endotracheal intubation (e.g., ET-CPAP).

Ventilator- associated Pneumonia (VAP): A pneumonia (PNEU) that occurs in a patient who was intubated and ventilated at the time of, or within 48 hours before, the onset of the pneumonia.

Note: There is no minimum period of time that the ventilator must be in place in order for the PNEU to be considered ventilator-associated.

Wound Class: An assessment of the degree of contamination of a surgical wound at the time of the operation. The wound class system used in NHSN is an adaptation of the American College of Surgeons wound classification schema. Wounds are divided into four classes:

Clean: An uninfected operative wound in which no inflammation is encountered and the respiratory, alimentary, genital, or uninfected urinary tracts are not entered. In addition, clean wounds are primarily closed and, if necessary, drained with closed drainage. Operative incisional wounds that follow nonpenetrating (blunt) trauma should be included in this category if they meet the criteria.

Clean-Contaminated: Operative wounds in which the respiratory, alimentary, genital, or urinary tracts are entered under controlled conditions and without unusual contamination. Specifically, operations involving the biliary tract, appendix, vagina, and oropharynx are included in this category, provided no evidence of infection or major break in technique is encountered.

Contaminated: Open, fresh, accidental wounds. In addition, operations with major breaks in sterile technique (e.g., open cardiac massage) or gross spillage from the gastrointestinal tract, and incisions in which acute, nonpurulent inflammation is encountered are included in this category.

Dirty or Infected: Includes old traumatic wounds with retained devitalized tissue and those that involve existing clinical infection or perforated viscera. This definition suggests that the organisms causing postoperative infection were present in the operative field before the operation.

Sources:

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